The Coal Situation

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POLAND AND THE INTERNATIONAL COAL MARKETS

In 1979, Poland supplied 41.4 million metric tons or 18 percent of the coal traded internationally. This was exceeded only by the United States, with exports of 59.9 million tons. The deterioration of labor relations within the country and the threat of a Soviet invasion obviously raises the level of concern regarding Polish coal supplies. This special issue of the *Coal Situation* will examine the ramifications that the events in Poland may have on the international markets for coal and other energy forms.

SIGNIFICANCE OF A POLISH SUPPLY DISRUPTION

The impacts of a disruption of Polish coal supplies being experienced in 1980 and the potential for a more serious disruption in 1981 would, at first glance, be expected to be similar to those felt during the labor difficulties experienced in the United States in 1977-78, when coal exports fell by more than 12 million metric tons from the previous year export level. International consumers responded by going to stockpiles as well as to alternative coal sources. Within the United States, the loss of supplies was offset by stockpiles built up before the strike, coal supplies from non-union mines, and through the increased use of alternative energy including oil and nuclear power. As a result, the impact of the disruption of U.S. supplies in 1977-78 was minor. The potential implications of a major Polish disruption in 1981 are far more serious for two reasons.

First, since 1978, there has been a major change in the cost and availability of oil supplies. As a result of the Iranian Revolution and the current hostilities between Iraq and Iran, the world oil markets are in a precarious balance. Although the build-up of discretionary oil stocks (see, e.g., *The Petroleum Situation*, October, 1980) is tempering the impacts of the Iran-Iraq war, the imposition of additional oil demand to replace lost Polish steam coal supplies could contribute to a renewed leapfrogging of spot market oil prices.

Second, the short-term ability to obtain coal from alternative sources is greatly limited owing to the surge in demands following the instability in the oil markets and the rapid escalation of oil prices in 1979. The difficulty in obtaining alternative coal supplies is not centered on the inability of coal producers to expand production. The U.S. alone possesses sufficient idle capacity to make up the supply shortfall in a relatively short period of time. Rather, the difficulty rests with the potential inability of world suppliers to physically deliver the coal to the consumer. Richards Bay, the South African export facility, is presently operating at full capacity. In the United States, existing port facilities are being taxed to the limits, causing heavy demurrage charges to shippers. Australia is the only major producer possessing some degree of flexibility. But the absolute level of any Australian increase is debatable.

Of the 41.4 million metric tons of coal Poland exported in 1979, 33.0 million metric tons (79.7 percent) was steam coal largely used by the utility sector. Only 8.4 million metric tons was metallurical grade coals.. As is shown in Table 1, Western Europe received over 58 percent of Poland's 1979 coal exports, non-European Western countries 5.8 percent, and the Socialist countries received 36.2 percent of Polish exports in 1976.

TABLE 1
POLISH HARD COAL EXPORTS – 1979

	Steam Coal		Metallurgical Coal		Total	
	Million Metric Tons	Percent of Total	Million Metric Tons	Percent of Total	Million Metric Tons	Percent of Total
Western Countries						
Europe	18.1	54.9	6.0	71.4	24.1	58.2
Non-Europe	0.6	1.8	1.7	21.2	2.3	5.8
Sub Total	18.7	56.7	7.7	92.6	26.4	63.8
Socialist Countries	14.3	43.3	0.7	8.4	15.0	36.2
Total	33.0	100.0	8.4	100.0	41.4	100.0

The estimated imports of Polish coal by country and the relative importance of these supplies to the country's total imports are shown in Table 2. In absolute volumes, the Soviet Union, which imported 9.4 million tons in 1979, is the biggest importer of Polish coal. These supplies also represent nearly all of the coal the Soviet Union imports. In the Western world, France, Finland, Italy, Denmark, and Germany are the largest recipients of Polish coal. Finland is most dependent, with about 91 percent of its imports coming from Poland. Denmark is second, with over 41 percent.

EXTENT OF POLISH SUPPLY DISRUPTIONS

The impact of the September miners' strike and subsequent work rule changes on Polish 1980 exports is still being assessed. The latest information from the Mining Ministry is for a drop of 8-9 million metric tons from 1979. Most of this shortfall would be experienced in the fourth

TABLE 2
ESTIMATED 1979 POLISH COAL IMPORTS BY COUNTRY

Country	Million Metric Tons	Percent of Countries Total Coal Imports
Western Countries		
France	4.6	16.8
Finland	4.3	89.6
Italy	3.3	23.7
Denmark	3.1	41.3
Germany (FR)	2.6	33.3
Spain	1.3	31.0
Brazil	1.2	26.7
Austria	1.0	35.7
All Others	5.1	4.1
Total	26.5	13.5
Socialist Countries		
U.S.S.R.	9.4	99.0
Czechoslavakia	2.2	41.5
Germany (DR)	2.0	33.3
Other	1.3	11.1
Total	14.9	45.9
Total	41.4	18.1

quarter. This coincides with a continued strong European demand for U.S. coal, particularly for steam coal supplies.

Plans made prior to the labor disruptions, which have not yet been revised, called for production levels of approximately 210-212 million metric tons in 1981. With expectations for continued labor unrest and the impacts of work rule changes, such as a 5-day work week, won by labor in September, it is unlikely that these targets can be achieved. The best that can be hoped for is that hard coal production will equal the 1980 level of 190-195 million tons.

In addition, coal provides approximately 85 percent of Poland's energy needs. Most likely, domestic consumers will be given priority, so the export market is anticipated to bear the brunt of any shortfalls in production. The prospects for Western importers are even worse since it is highly likely that Poland's sister members of the Comecon organization (Soviet Union, Czechoslovakia, East Germany, etc.,) will be given the next highest priority. In other words, the Western nations, principally in Europe, must be prepared to experience the full extent of any Polish coal production shortfall.

In the most extreme scenario, a Soviet invasion that is met by a militant labor force could result in a disruption in Polish supplies that could range up to an entire year. Such an event, although possible, still would seem to have a very low probability. At a minimum, a labor force, either from the military or from another Comecon nation could be called in to continue mining operations. A slightly more probable outcome under an invasion scenario would be a complete loss of exports to Western nations, and some shortages in Eastern Europe. The impact of the loss of all Polish exports is analyzed below. The resulting shortfalls in Polish coal availabilities in 1981 are shown in Table 3.

TABLE 3
POSSIBLE POLISH COAL EXPORT SHORTFALLS
1981 VERSUS 1979
(Million Metric Tons)

	Western Countries	Socialist Countries	Total
No–Invasion Scenario	−15.0	0	−15.0
Invasion Scenario (Loss of all exports)	−26.5	−14.9	−41.4

IMPLICATIONS OF 1981 SHORTFALLS

Under the *no-invasion* scenario, the Western countries would have to replace approximately 15 million tons of coal, approximately twice the replacement quantity expected for 1980. Some of the shortages will be made up from stockpiles. Also, additional supplies will be available from the U.S. and Australia in 1981, approximately 4 million tons and 1 million tons, respectively. As a result, the high demand pressures on U.S. supplies created in 1980 will be maintained and increased in 1981. Port facility bottlenecks will continue and heavy demurrage charges should be expected. In general, the no-invasion scenario, although creating difficulties, would not lead to significant disruptions in economic activity. The invasion scenario, however, raises serious concerns.

The total loss of a quantity of coal equal to Poland's 1979 exports, could not be replaced by coal from alternative sources including stockpiles. Optimistically, only half of this quantity could be made up by additional supplies from the U.S., Australia and other locations, and the remainder would have to come from increased oil usage and decreased energy demands because of higher energy prices and lower economic activity.

There would also be a direct impact on coal prices. The scramble to replace lost supplies from Poland would result in a bidding war for short-term supplies that could be expected to cause a 30-40 percent increase in spot market prices, primarily in steam coal prices. Bottlenecks at U.S. port facilities would continue, and similar difficulties would begin to appear in Australia. In addition to the impacts of demurrage charges, ocean freight rates should start to show significant increases.

Over 95 percent of the Polish coal delivered to Western countries is by ocean vessel, with approximately half of the ocean trade in Polish ships. An invasion met with a militant labor force would severely impact the availability of Polish ocean vessels. The lack of Polish flag vessels, together with the need for longer distance transportation of alternative coal supplies, would result in significant increases (10-20%) in ocean freight rates.

The inability to replace Polish coal with alternative coal supplies could stimulate renewed leap-frogging of oil prices such as followed the Iranian Revolution. A 15-18 million ton shortfall equals approximately 170-210 thousand barrels of oil per day. This is less than half a percent of 1981 world oil demands, but it would occur at a time when the world oil market is in a precarious balance.*

CONCLUSIONS

The level of uncertainty surrounding the Polish situation and the possible severity of the outcome clearly indicate a need to closely watch the events in Poland. At a minimum, coal shippers, producers, and users can expect to see a continuation of the heavy demand pressures for U.S. coal suppliers and an increase in demand for Australian coal. At the extreme, an invasion by the Soviet Union would produce rapidly escalating spot market coal prices, further port congestion in the U.S. and Australia, and a significant increase in freight rates. In addition, the need to replace a portion of the lost supplies with oil greatly increases the potential for renewed price instability for world oil markets.

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* The reader should refer to Chase's October, 1980 issue of *The Petroleum Situation* for a fuller discussion of the current world oil markets.